

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-102 (canceled)

Claim 103 (currently amended): ~~The filter media according to claim 102~~ High performance filter media comprising nanofibers of diameter less than 1 μ m incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μ m, said filter media having distally opposite upstream and downstream faces normal to flow therethrough and defining a single layer filter media thickness therebetween, said internal structure incorporating between said faces and within said single layer at least one of the following macrostructures, defined as viewed at magnification of 5 to 50 X, in combination with at least one of the following microstructures, defined as viewed at magnification of 50 to 500 X,

macrostructure A wherein said nanofibers are distributed uniformly throughout said filter media and within said single layer,

macrostructure B wherein said nanofibers are distributed unevenly in bundles providing pockets of nanofibers in a matrix of coarse fibers all within said single layer,

macrostructure C wherein said nanofibers are concentrated at one of said faces and within said single layer,

microstructure 1 wherein said filter media has a nanofiber/coarse fiber interface wherein said nanofibers form bridges across pores between said coarse fibers all within said single layer,

microstructure 2 wherein said filter media has a nanofiber/coarse fiber interface wherein said nanofibers substantially cling onto said coarse fibers all within said single layer,

microstructure 3 wherein said filter media has a nanofiber/coarse fiber interface wherein there is no significant bridging of nanofibers across said pores between said coarse fibers and no significant clinging of said nanofibers onto said coarse fibers, and instead said nanofibers clump together all within said single layer,

wherein:

said nanofibers and coarse fibers have different wettability,

25 wherein said filter media captures droplets from a liquid to be filtered, and wherein said nanofibers are preferentially wetted by said droplets, and said coarse fibers are preferentially non-wetted by said droplets, whereby to create a capillary pressure gradient wicking droplets off said coarse fibers, facilitating drainage, and wherein said nanofibers are hydrophylic, and said coarse fibers are oleophylic.

Claim 104 (currently amended): ~~The filter media according to claim 102~~ High performance filter media comprising nanofibers of diameter less than 1 μ m incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μ m, said filter media having distally opposite upstream and downstream faces normal to flow therethrough and defining a
5 single layer filter media thickness therebetween, said internal structure incorporating between said faces and within said single layer at least one of the following macrostructures, defined as viewed at magnification of 5 to 50 X, in combination with at least one of the following microstructures, defined as viewed at magnification of 50 to 500 X,

10 macrostructure A wherein said nanofibers are distributed uniformly throughout said filter media and within said single layer,

macrostructure B wherein said nanofibers are distributed unevenly in bundles providing pockets of nanofibers in a matrix of coarse fibers all within said single layer,

macrostructure C wherein said nanofibers are concentrated at one of said faces and within said single layer,

15 microstructure 1 wherein said filter media has a nanofiber/coarse fiber interface wherein said nanofibers form bridges across pores between said coarse fibers all within said single layer,

microstructure 2 wherein said filter media has a nanofiber/coarse fiber interface wherein said nanofibers substantially cling onto said coarse fibers all within said single layer,

20 microstructure 3 wherein said filter media has a nanofiber/coarse fiber interface wherein there is no significant bridging of nanofibers across said pores between said coarse fibers and no significant clinging of said nanofibers onto said coarse fibers, and instead said nanofibers clump together all within said single layer,

wherein:

said nanofibers and coarse fibers have different wettability,

- 25 wherein said filter media captures and coalesces droplets from a liquid to be filtered, and wherein said nanofibers are preferentially non-wetted by said droplets, and said coarse fibers are preferentially wetted by said droplets, whereby to create a capillary pressure gradient wicking droplets off said nanofibers, facilitating coalescence and drainage, wherein said coarse are hydrophylic, and said nanofibers are oleophylic.